

25-977

UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

ASSOCIATION OF CONTRACTING PLUMBERS OF THE CITY OF NEW YORK, INC.,
PLUMBING-HEATING-COOLING CONTRACTORS-NATIONAL ASSOCIATION,
PLUMBERS LOCAL UNION NO. 1, UNITED ASSOCIATION OF JOURNEYMEN AND
APPRENTICES OF THE PLUMBING AND PIPEFITTING INDUSTRY OF THE UNITED
STATES AND CANADA, NEW YORK STATE ENERGY COALITION, INC., PLUMBING
FOUNDATION CITY OF NEW YORK, INC., LICENSED PLUMBING ASSOCIATION OF
NEW YORK CITY, INC., DBA MASTER PLUMBERS COUNCIL OF THE CITY OF NEW
YORK, BUILDING INDUSTRY ASSOCIATION OF NEW YORK CITY, INC.,

Plaintiffs-Appellants,

v.

CITY OF NEW YORK

Defendant-Appellee.

On Appeal from the United States District Court
for the Southern District of New York

BRIEF FOR SIERRA CLUB AS *AMICUS CURIAE* SUPPORTING DEFENDANT-APPELLEE

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RULE 26.1 CORPORATE DISCLOSURE STATEMENT

Amicus Curiae Sierra Club is a nonprofit public benefit corporation incorporated under the laws of California. It does not have a parent corporation, and it does not have any publicly traded stock.

Dated: November 6, 2025

/s/ Bridget M. Lee
BRIDGET M. LEE

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Yifang Zhu et. al., *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California*, UCLA Fielding School of Public Health (Apr. 2020).....1, 4

STATEMENT OF INTEREST¹

Founded in 1892, Sierra Club is the nation's oldest and largest grassroots environmental organization with more than 604,000 members nationwide, including nearly 36,000 members in New York state. For decades, Sierra Club has supported policies that limit pollution from fossil fuels and promote clean energy and in recent years has advocated for measures that protect the public against the health harms caused by burning methane gas in buildings. For example, Sierra Club has published and supported reports demonstrating the significant contribution of gas combustion in buildings to indoor and outdoor air pollution.² Sierra Club has advocated for policies to reduce pollution from buildings in legislative, regulatory, and judicial proceedings across the country, including in New York. Last year, Sierra Club and partner organizations tested air quality in

¹ No party's counsel authored this brief in whole or in part, and no person or entity, other than amicus, their members, or their counsel contributed money that was intended to fund the preparation or submission of this brief. *See Fed. R. App. P. 29(a)(4)(E)*. All parties to this proceeding have consented to the filing of this brief.

² *See, e.g.*, Brady Seals & Andee Krasner, *Health Effects from Gas Stove Pollution*, RMI, Physicians for Social Responsibility, Mothers Out Front & Sierra Club (May 2020), <https://rmi.org/insight/gas-stovespollution-health/>; Yifang Zhu et. al., *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California*, UCLA Fielding School of Public Health (prepared for Sierra Club) (Apr. 2020), <https://ucla.app.box.com/s/xyzt8jc1ixnetiv0269qe704wu0ihif7>; Sonoma Technology, *Ozone Impacts from Building Combustion Sources on Nonattainment Areas in New York* (Aug. 16, 2024), https://www.sierraclub.org/sites/default/files/2024-09/ny_buildingsreport.pdf.

nearly 700 kitchens in the Washington D.C. metropolitan area to measure the impact of gas stoves on nitrogen oxide levels.³ In nearly two thirds of the kitchens tested, the study found significantly elevated levels of nitrogen oxide—well in excess of the federal health-based standard for outdoor air.⁴

INTRODUCTION AND SUMMARY OF ARGUMENT

There is a strongly established scientific basis and growing public understanding that burning fossil fuels inside of homes, schools, and workplaces makes people sick. The health harms attributable to emissions from gas-burning appliances have been recognized for decades. More recent studies have uncovered the true extent and severity of the connection. Robust research shows that gas-burning appliances are a leading source of health-harming indoor and outdoor air pollution as well as climate-destabilizing greenhouse gases. In response, the City of New York has acted to protect its residents from such pollution and to advance its climate, air quality, and health goals through Local Law 154.

Exposure to the air pollutants emitted when gas is burned causes lung diseases, such as asthma and chronic obstructive pulmonary disease, as well as cardiovascular disease, cognitive deficits, cancer, and death. Children living in

³ Beyond Gas, *Cooking Up Danger* (Nov. 2024), <https://beyondgasdc.org/cooking-up-danger-community-study-reveals-hazardous-nitrogen-dioxide-levels-in-dc-and-maryland-kitchens/>.

⁴ *Id.* at P3.

homes with gas stoves are 42% more likely to experience asthma symptoms.⁵

Nearly 13% of childhood asthma nationwide is attributable to gas stove use.⁶ In New York State that figure is over 18%—meaning nearly 60,000 childhood asthma cases “could be theoretically prevented if gas stove use was not present.”⁷

Plaintiffs-Appellants’ expansive reading of the Energy Policy and Conservation Act (“EPCA”)’s preemptive reach would negate the City’s well-established authority to reduce air pollution that harms public health, pursuant to its valid police powers. EPCA’s text and structure do not support this expansive reading. Affirming the district court’s order will preserve the City’s traditional police powers.

⁵ Weiwei Lin et al., *Meta-Analysis of the Effects of Indoor Nitrogen Dioxide and Gas Cooking on Asthma and Wheeze in Children*, 42 INT’L J. EPIDEMIOLOGY 1728 (Dec. 2013), available at <https://doi.org/10.1093/ije/dyt150>.

⁶ Talor Gruenwald et al., *Population Attributable Fraction of Gas Stoves and Childhood Asthma in the United States*, 20 INT’L J. ENV’T RSCH. & PUB. HEALTH 75 (2023), available at <https://doi.org/10.3390/ijerph20010075>.

⁷ *Id.* at 1; N.Y. State Dept. of Health, *Information on Asthma in New York State*, available at https://www.health.ny.gov/statistics/ny_asthma/ (last updated May 2023) (315,000 children in New York State had asthma in 2021).

ARGUMENT

I. Gas Combustion in Buildings Generates Harmful Pollutants that Degrade Indoor and Outdoor Air Quality and Endanger Public Health.

Burning gas in buildings for space and water heating and for cooking generates air pollution that is directly emitted into people's indoor living spaces or is vented outdoors where it contributes to ambient air pollution.⁸ Termed "natural gas" by industry, the blend of chemicals that is piped into and burned in homes and other buildings across the country is primarily composed of methane.⁹ The chemical byproducts of combusting methane gas include nitrogen oxides,¹⁰

⁸ Zhu et. al., *supra* n.2.

⁹ Drew R. Michanowicz et al., *Home Is Where the Pipeline Ends: Characterization of Volatile Organic Compounds Present in Natural Gas at the Point of the Residential End User*, 56 ENV'T SCI. & TECH. 10258, 10258 (June 2022), available at <https://pubs.acs.org/doi/10.1021/acs.est.1c08298> (identifying 296 volatile organic compounds aside from methane in cooking gas samples); Eric D. Lebel et al., *Composition, Emissions, and Air Quality Impacts of Hazardous Air Pollutants in Unburned Natural Gas from Residential Stoves in California*, 56 ENV'T SCI. & TECH. 15828 (Oct. 20, 2022), available at <https://pubs.acs.org/doi/pdf/10.1021/acs.est.2c02581>.

¹⁰ "Nitrogen Dioxide (NO₂) is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NO_x). Other nitrogen oxides include nitrous acid and nitric acid. NO₂ is used as the indicator for the larger group of nitrogen oxides." U.S. EPA, *Basic Information about NO₂*, <https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2> (last updated July 10, 2025).

particulate matter, carbon monoxide, volatile organic compounds such as formaldehyde¹¹ as well as the greenhouse gas carbon dioxide.

The U.S. Environmental Protection Agency (“U.S. EPA”) has acknowledged that nitrogen oxides—dangerous gases in their own right and precursor pollutants to ground-level ozone and fine particulate matter (“PM_{2.5}”)¹²—are “an inherent consequence of fossil fuel combustion.”¹³ In addition to being a product of chemical reactions involving nitrogen oxides, PM_{2.5} is also itself emitted directly when fossil fuels are combusted.¹⁴ Carbon monoxide, an odorless, colorless, and toxic gas, is produced by the incomplete combustion of fossil fuels.¹⁵ Benzene and other cancer-causing compounds are generated during fossil fuel combustion as well as leaking directly from gas stoves at a near-constant rate even when the

¹¹ U.S. EPA, *What are combustion products?*, <https://www.epa.gov/indoor-air-quality-iaq/what-are-combustion-products> (last updated Dec. 4, 2024); U.S. EPA, *Facts About Formaldehyde*, <https://www.epa.gov/formaldehyde/facts-about-formaldehyde> (last updated July 7, 2025).

¹² U.S. EPA, *Basic Information about NO₂*, *supra* n.10.

¹³ U.S. EPA, EPA-600/1-77-013, Nitrogen Oxides at 1-1 (1977), *available at* <https://nepis.epa.gov/Exe/ZyPDF.cgi/2000XWPA.PDF?Dockey=2000XWPA.pdf>.

¹⁴ National Ambient Air Quality Standards for Particulate Matter, 71 Fed. Reg. 61,144, 61,146 (Oct. 17, 2006).

¹⁵ U.S. EPA, *Basic Information about Carbon Monoxide*, <https://www.epa.gov/air-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution#What%20is%20CO> (last updated June 17, 2025).

appliances are turned off.¹⁶ The City's Local Law 154 will eliminate a major source of these pollutants, resulting in improved indoor and outdoor air quality for New Yorkers.

A. Indoor Air Pollution from Gas-Burning Appliances Threatens Human Health.

Exposure to nitrogen oxides and PM_{2.5} emitted by gas appliances has been increasingly and more conclusively linked to higher rates of respiratory and cardiovascular illnesses, such as childhood asthma, as well as reduced lung function and premature death.¹⁷ The U.S. EPA has long recognized that nitrogen dioxide, the most prevalent pollutant from gas combustion, can cause asthma.¹⁸ Even short-term nitrogen dioxide exposure can cause impaired lung function, respiratory symptoms, inflammation of the airway, and asthma exacerbations

¹⁶ See Eric D. Lebel et al., *Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes*, 56 ENV'T SCI. TECH. 2529, 2534 (May 2022), available at <https://pubs.acs.org/doi/10.1021/acs.est.1c04707> (research results showing that “most stoves and associated nearby piping leak some methane continuously”); Michanowicz et al., *supra* n.9, at 10266 (finding benzene and other carcinogenic pollutants in gas samples from home kitchens); Yannai S. Kashtan et al., *Gas and Propane Combustion from Stoves Emits Benzene and Increases Indoor Air Pollution*, 57 ENV'T SCI. & TECH. 9653 (June 2023), available at <https://pubs.acs.org/doi/10.1021/acs.est.2c09289>.

¹⁷ Krasner, Andee et al., *Cooking with Gas, Household Air Pollution, and Asthma: Little Recognized Risk for Children*, 83 J. ENV'T HEALTH 8, 14 (2021), available at <https://www.proquest.com/docview/2505418593?sourceType=Scholarly%20Journals>.

¹⁸ National Primary and Secondary Ambient Air Quality Standards, 36 Fed. Reg. 8186 (Apr. 30, 1971).

requiring hospitalization.¹⁹ Exposure to nitrogen dioxide is also linked to chronic obstructive pulmonary disease, cardiovascular effects, diabetes, cancer, and reproductive harms.²⁰

In 2008, the U.S. EPA recognized that “homes with gas cooking appliances have approximately 50% to over 400% higher [nitrogen dioxide] concentrations than homes with electric cooking appliances.”²¹ More recently, in 2022, scientists at the Lawrence Berkeley National Laboratory demonstrated that up to 70% of residents living in homes with unvented²² gas cooking appliances are exposed to nitrogen dioxide concentrations that exceed the National Ambient Air Quality Standard (U.S. EPA’s outdoor limit) of 100 parts per billion.²³ In one particularly

¹⁹ Primary National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 6474, 6479-80 (Feb. 9, 2010).

²⁰ U.S. EPA, *Integrated Science Assessment (ISA) For Oxides of Nitrogen – Health Criteria*, 1-17, 1-22 to 1-30, 5-55 (Jan. 2016), available at <https://assessments.epa.gov/isa/document/&deid=310879>.

²¹ U.S. EPA, *Integrated Science Assessment for Oxides of Nitrogen – Health Criteria* 2-38 (July 2008), available at <https://assessments.epa.gov/isa/document/&deid=194645#downloads>.

²² Even exhaust ventilation of gas cooking appliances has proved to be less effective at reducing pollution than previously thought. See Nat’l Ctr. for Healthy Hous., *Studying the Optimal Ventilation for Environmental Indoor Air Quality* 3 (Apr. 2022), available at https://nchh.org/resource-library/report_studying-the-optimal-ventilation-for-environmental-indoor-air-quality.pdf (emissions monitoring in Chicago and New York homes found no significant reduction in NO₂ from ventilation and 13% to 44% reductions in other contaminants).

²³ Jennifer M. Logue et al., *Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California*, 122 ENV’T

alarming study, gas oven operation alone was shown to produce enough peak nitrogen dioxide to exceed the national standard within minutes.²⁴ These results are closely consistent with those of the air quality testing conducted in the District of Columbia and Maryland by the Sierra Club.²⁵

Particulate matter, another air pollutant generated by gas combustion, poses a unique threat to human health.²⁶ PM_{2.5} refers to inhalable particles with diameters that are 2.5 micrometers and smaller, and thus easily penetrate the defenses of our lungs.²⁷ Exposure to PM_{2.5} has been linked to heart attacks, strokes, worsening of chronic heart failure, and sudden cardiac death; impaired fetal and childhood lung function development; and the development and exacerbation of asthma.²⁸ Even short-term exposure “is likely causally associated with mortality from

HEALTH PERSPECTIVES 43, 47, 49-50 (Jan. 2014), *available at* <https://PMC3888569/>; U.S. EPA, Review of the Primary National Ambient Air Quality Standards for Oxides of Nitrogen, 83 Fed. Reg. 17,226, 17,226–27 (April 18, 2018).

²⁴ Lebel et al., *Methane and NO_x Emissions*, *supra* n.16.

²⁵ *Supra* n.3.

²⁶ National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,653–54 (July 18, 1997).

²⁷ *Id.* at 38,654.

²⁸ Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. 20,586, 20,586-87 (Apr. 25, 2007). *See also* U.S. EPA, *Health and Environmental Effects of Particulate Matter (PM): Health Effects*, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm> (last updated May 23, 2025).

cardiopulmonary diseases, increased hospitalization and emergency department visits for cardiopulmonary diseases, increased respiratory symptoms, [and] decreased lung function.”²⁹ There is no safe level of PM_{2.5} exposure.³⁰

According to the U.S. EPA, homes with gas-burning appliances have higher carbon monoxide levels than those without.³¹ Carbon monoxide poisoning results in more than 400 deaths and over 100,000 emergency department visits in the U.S. annually.³² Carbon monoxide exposure is also linked to respiratory illnesses and neurological impairment.³³

In addition to the byproducts of fossil fuel combustion that have been understood for decades, newer research indicates that gas-burning appliances also release semi-volatile organic compounds known as polycyclic aromatic

²⁹ Prevention of Significant Deterioration (PSD) for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5})—Increments, Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMC), 72 Fed. Reg. 54,112, 54,128 (Sept. 21, 2007).

³⁰ U.S. EPA, *Integrated Science Assessment for Particulate Matter ES-23* (Dec. 2019), available at <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=347534>.

³¹ U.S. EPA, *Carbon Monoxide’s Impact on Indoor Air Quality*, <https://www.epa.gov/indoor-air-quality-iaq/carbon-monoxides-impact-indoor-air-quality> (last updated Oct. 7, 2025).

³² U.S. Ctr. for Disease Control, *Carbon Monoxide Poisoning Basics* (April 15, 2024), <https://www.cdc.gov/carbon-monoxide/about/index.html>; see also Jason J. Rose *et al.*, *Carbon Monoxide Poisoning: Pathogenesis, Management, and Future Directions of Therapy*, 195 Am. J. Respiratory & Critical Care Med. 596 (2017), available at <https://www.atsjournals.org/doi/full/10.1164/rccm.201606-1275CI>.

³³ U.S. EPA, *Carbon Monoxide’s Impact on Indoor Air Quality*, *supra* n.30 at 2-7.

hydrocarbons (“PAHs”),³⁴ as well as volatile organic compounds like formaldehyde³⁵ and benzene.³⁶ For instance, a 2022 study of Boston’s gas supply revealed the presence of 296 volatile organic compounds, including 21 hazardous air pollutants.³⁷ All of these are linked to cancer and, thus, no safe level of exposure can be recommended. Long-term exposure to benzene can lead to blood disorders and, according to the American Cancer Society, is linked to higher rates of cancer, including leukemia and other blood cancers. Short-term exposure to benzene can also cause “drowsiness, dizziness, headaches, tremors, confusion, and/or unconsciousness.”³⁸

Given the robust body of scientific literature detailed above, leading national health organizations are recognizing the immense public health risks associated with gas appliances. In June 2022, the American Medical Association stated that:

³⁴ U.S. Ctr. for Disease Control, Polycyclic Aromatic Hydrocarbons (PAHs) Fact Sheet (Nov. 2009), https://www.epa.gov/sites/default/files/2014-03/documents/pahs_factsheet_cdc_2013.pdf.

³⁵ U.S. EPA, *Facts About Formaldehyde*, *supra* n.11.

³⁶ Michanowicz et al., *supra* n.9, at 10266.

³⁷ Michanowicz et al., *supra* n.9, at 10258. Researchers in California similarly found 12 hazardous air pollutants in gas piped into homes, including benzene in similar concentrations to those in secondhand tobacco smoke. Lebel et al., *Composition, Emissions, and Air Quality Impacts*, *supra* n.9, at 15,828, 15,835.

³⁸ Am. Cancer Soc’y, *Benzene and Cancer Risk*, <https://www.cancer.org/cancer/risk-prevention/chemicals/benzene.html> (last revised Feb. 1, 2023).

- (1) recognizes the association between the use of gas stoves, indoor nitrogen dioxide levels and asthma; [and]
- (2) will inform its members and, to the extent possible, health care providers, the public, and relevant organizations that use of a gas stove increases household air pollution and the risk of childhood asthma and asthma severity; which can be mitigated by reducing the use of the gas cooking stove, using adequate ventilation, and/or using an appropriate air filter.³⁹

In July 2022, the American Lung Association published a report synthesizing its literature review of the impacts of indoor residential gas combustion, finding that gas appliance emissions degrade indoor air quality, resulting in worse asthma symptoms and reduced lung function in children and other vulnerable populations.⁴⁰ In November 2022, the American Public Health Association adopted a policy acknowledging the scientific evidence linking gas stove emissions and negative health effects and called on regulatory agencies and policymakers to enact measures to abate gas appliance emissions.⁴¹

³⁹ Am. Med. Ass'n, House of Delegates Report of Reference Committee D at 16-17, Res. 439, A-22 (2022), *available at* <https://www.ama-assn.org/system/files/a22-refcmte-d-report-annotated.pdf>.

⁴⁰ Am. Lung Ass'n, *Literature Review on the Impacts of Residential Combustion, Final Report*, *supra* n.5.

⁴¹ Am. Pub. Health Ass'n, Policy No. 20225, *Gas Stove Emissions are a Public Health Concern: Exposure to Indoor Nitrogen Dioxide Increases Risk of Illness in Children, Older Adults, and People with Underlying Health Conditions* (Nov. 8, 2022), *available at* <https://www.apha.org/Policies-and-Advocacy/Public-Health-Policy-Statements/Policy-Database/2023/01/18/Gas-Stove-Emissions>.

Each of these three organizations highlights particular concern with the asthma-related health effects caused by exposure to nitrogen dioxide emitted during gas combustion. In 2013, researchers estimated that children living in homes that cook with gas are 42% more likely to presently have asthma and 24% more likely to have asthma at some point during their lives.⁴² A 2023 analysis found that nearly 13% of childhood asthma nationwide is attributable to gas stove use.⁴³

B. Outdoor Air Pollution from Gas-Burning Appliances Threatens Human Health.

Fossil fuel combustion in buildings is a major source of ambient air pollution as well, with most emissions vented directly outdoors. According to data from U.S. EPA's National Emissions Inventory, combusting fossil fuels in buildings releases over 250,000 tons per year of carbon monoxide, over 460,000 tons of nitrogen oxides, and more than 15,000 tons of fine particulate matter nationwide.⁴⁴ In New York alone, burning fossil fuels in buildings results in over 22,000 tons of carbon monoxide emissions, over 45,000 tons per year of nitrogen

⁴² Lin et al., *supra* n.6 at 1724.

⁴³ Gruenwald et al., *supra* n.7.

⁴⁴ Data from U.S. EPA, *2017 National Emissions Inventory (NEI) Data*, available at <https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq>.

oxides, and nearly 2,500 tons of fine particulate matter each year.⁴⁵ To put these emissions in perspective, the annual total carbon monoxide and nitrogen oxide emissions from buildings are more than double the combined emissions from all fossil fuel-fired power plants and industrial facilities in New York,⁴⁶ and fine particulate matter building emissions far exceed those from power generation and industry as well.⁴⁷

The consequences of these emissions on ambient air quality are significant and harmful. Ground-level ozone is a highly reactive gas that is formed by interactions between nitrogen oxides and volatile organic compounds, which are emitted by gas-burning equipment and other sources, in the presence of heat and sunlight.⁴⁸ Ozone exposure, even over a short time period, is linked to chronic conditions affecting the respiratory, cardiovascular, reproductive, and central nervous systems, as well as premature mortality.⁴⁹ Ozone exposure is also

⁴⁵ *Id.*

⁴⁶ *Id.* (Fewer than 11,000 tons of carbon monoxide and fewer than 19,000 tons of nitrogen oxides were emitted by power plants and industry.)

⁴⁷ *Id.* (Fewer than 1,700 tons of PM_{2.5} were emitted by power plants and industry.)

⁴⁸ U.S. EPA, *What is Ozone?*, <https://www.epa.gov/ozone-pollution-and-your-patients-health/what-ozone#> (last updated June 6, 2025).

⁴⁹ U.S. EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants 1-5*, Tbl. 1-1 (Feb. 2013), available at https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p_download_id=511347 [hereinafter “2013 Ozone Integrated Science Assessment”].

associated with increased asthma attacks, emergency room visits, hospitalization, and medication for asthma.⁵⁰ While the health impacts of ozone are ubiquitous, certain populations are at an increased risk, including people with asthma, children, older adults, and outdoor workers.⁵¹

Rewiring America, an organization that shares data and tools to help Americans cost effectively electrify buildings, recently published a study finding that replacing gas-burning appliances that vent outdoors (*i.e.*, space and water heaters and clothes dryers) with electric alternatives nationwide would produce \$40 billion in annual public health benefits—including 3,400 fewer premature deaths, 1,300 fewer hospital admissions and emergency room visits, and 220,000 fewer asthma attacks.⁵² Another study found that residential and commercial fuel combustion in New York is responsible for 1,940 premature deaths and \$21.7 billion in health impacts each year.⁵³

⁵⁰ U.S. EPA, *Health Effects of Ozone Pollution*, <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution> (last updated March 13, 2025).

⁵¹ U.S. EPA, *What is Ozone?*, *supra* n.49 at 2-30.

⁵² Rewiring America, *Breathe Easy* (Dec. 2024), available at <https://a-us.storyblok.com/f/1021068/x/f03d441bd0/breathe-easy-report-rewiring-america.pdf>.

⁵³ RMI, *Fact Sheet: All-Electric Buildings: A Health Priority for New York* at 1 (June 2023), <https://rmi.org/insight/state-level-building-electrification-factsheets/>.

For years, the New York metropolitan area (which includes all boroughs of New York City) has failed to meet health-based ambient air quality standards established by U.S. EPA for ozone.⁵⁴ Based on air monitor data collected through the 2024 ozone season—the most current validated data—the New York City metro area continually fails to meet the national ozone standard.⁵⁵ The Clean Air Act requires EPA to set primary ambient air quality standards that “are requisite to protect the public health.” 42 U.S.C. § 7409. Thus, in places where such health-based standards are routinely violated, like New York City, residents are at risk of breathing unsafe levels of air pollutants.

Emissions from buildings play a significant role in that failing air quality. In the New York nonattainment area, researchers have estimated that 22% of ozone-causing nitrogen oxide emissions are attributable to combustion appliances.⁵⁶ Sierra Club retained an expert modeling firm to analyze the impact of emissions

⁵⁴ Designations of Areas for Air Quality Planning Purposes; New York, New Jersey, Connecticut; New York-Northern New Jersey-Long Island, NY-NJ-CT 2015 8-Hour Ozone Nonattainment Area; Reclassification to Serious, 89 Fed. Reg. 60,314 (July 25, 2024).

⁵⁵ U.S. EPA, Ozone Design Values, 2024 (May 28, 2025), *available at* <https://www.epa.gov/air-trends/air-quality-design-values> (design values for violating monitors in Queens, Suffolk, and Westchester exceeded the 70-parts per billion standard for ozone, along with monitors in neighboring counties in New Jersey and Connecticut).

⁵⁶ Talor Gruenwald *et al.*, *How Air Agencies Can Help End Fossil Fuel Pollution from Buildings* at 11, RMI (2021), <https://rmi.org/insight/outdoor-air-quality-brief/>.

from New York's buildings on ozone levels in the New York nonattainment area.⁵⁷

Using EPA's modeling platform and its emissions data files, the Sierra Club-commissioned modeling found that on high ozone days emissions from New York City buildings surpassed EPA's threshold for determining significant contribution to air quality violations.⁵⁸ These results demonstrate that abating emissions from New York City buildings could materially assist in restoring safe air quality.

In addition to ozone pollution, nitrogen oxide emissions from gas combustion in buildings contribute to the formation of fine particulate matter. As discussed above, exposure to PM_{2.5} has serious and potentially deadly consequences,⁵⁹ with even very temporally limited exposure likely to cause harm.⁶⁰ These harms fall disproportionately on people of color, who are exposed to significantly more ambient PM_{2.5} than whites from all sources nationwide, with the

⁵⁷ Sonoma Technology, *Ozone Impacts from Building Combustion Sources on Nonattainment Areas in New York* (Sept. 2024), available at https://www.sierraclub.org/sites/default/files/2024-09/ny_buildingsreport.pdf.

⁵⁸ *Id.*

⁵⁹ Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. at 20,586-87. See also U.S. EPA, *Health and Environmental Effects of Particulate Matter (PM): Health Effects*, *supra* n.29.

⁶⁰ Prevention of Significant Deterioration (PSD) for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5})—Increments, Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMC), 72 Fed. Reg. at 54,128.

largest sources of relative disparities being residential gas combustion and commercial cooking.⁶¹

II. Gas Combustion in Buildings Generates Harmful Climate Pollution, Prompting State and Local Legislation to Protect Health and Safety.

Climate destabilization caused by greenhouse gas emissions—a significant portion of which are generated by burning fossil fuels in buildings—poses an existential threat to human health, welfare, and the environment. The United Nations recently declared that the “window of opportunity to secure a liveable and sustainable future for all,” by drastically reducing emissions in all sectors, is rapidly closing⁶² and delivered its most alarming assessment to date of the impacts of climate change, including increasingly deadly heat waves, wildfires, drought, and floods.⁶³ Recognizing the importance of local action, the United Nations assessment highlights urban systems as “critical for achieving deep emissions

⁶¹ Christopher W. Tessum et al., *PM2.5 Polluters Disproportionately and Systemically Affect People of Color in the United States*, 7(18) Sci. Advances, supplementary data file S2 (2021), available at <https://www.science.org/doi/10.1126/sciadv.abf4491>; see also *Ctr. for Cmty. Action & Env’t Just. v. Fed. Aviation Admin.*, 61 F.4th 633, 655 (9th Cir. 2023) (Rawlinson, J., dissenting) (discussing environmental racism).

⁶² United Nations Intergovernmental Panel on Climate Change, *Climate Change 2023: Synthesis Report of the Sixth Assessment Report: Summary for Policymakers* 24 (2023) [hereinafter “IPCC SYR AR6”], <https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC AR6 SYR SPM.pdf>.

⁶³ *Id.* at 5–7.

reductions,” and explicitly emphasizes the “design, construction, retrofit, and use of buildings” as key emission mitigation elements.⁶⁴

Climate pollution from buildings impedes the City’s ability to meet its emissions reduction targets, and has state-wide, national, and international repercussions, as those emissions worsen the climate crisis. As described above, gas combustion in New York City’s building sector releases the greenhouse gas carbon dioxide into the atmosphere. In addition, the even more potent greenhouse gas methane leaks from gas distribution pipes that supply buildings with this fuel. In 2023, 36% of the City’s direct greenhouse gas emissions came from burning gas in residential and commercial buildings.⁶⁵ Local Law 154 will reduce emissions from newly constructed buildings, thereby allowing the City to advance its climate goals and protect its residents’ health and safety. This court should ensure that the City—and similarly situated state and local governments—retains the ability protect its residents in this way, through the exercise of its traditional police powers.

⁶⁴ IPCC SYR AR6, *supra* n.63, at 29.

⁶⁵ New York City Greenhouse Gas Inventories, <https://www.nyc.gov/content/climate/pages/initiatives/nyc-greenhouse-gas-inventories> (last visited November 5, 2025).

CONCLUSION

This Court should affirm the district court's order.

Dated: November 6, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with the type-volume limitation of Fed. R. App. P. 29(a)(5) and Local Rules 32.1(a)(4)(A), 29.1(c) because it contains 4,082 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii). I further certify that this brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Word in 14- point Times New Roman.

Dated: November 6, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on November 6, 2025, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Second Circuit by using the appellate CM/ECF system. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

Dated: November 6, 2025

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